

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

SOLAS OLED LTD.,	§	
	§	
<i>Plaintiff,</i>	§	
	§	
v.	§	CIVIL ACTION NO. 2:21-CV-00105-JRG
	§	
SAMSUNG ELECTRONICS CO., LTD.,	§	
SAMSUNG ELECTRONICS AMERICA, INC.,	§	
	§	
<i>Defendants.</i>	§	

CLAIM CONSTRUCTION MEMORANDUM AND ORDER

In this patent case, Plaintiff Solas OLED Ltd. (“Solas”) alleges infringement by Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc., (collectively, “Samsung”) of certain claims of U.S. Patent 8,526,767 (the “’767 Patent”). The patent relates to “[a] state machine gesture recognition algorithm for interpreting streams of coordinates received from a touch sensor,” ’767 Patent at [57].

The parties dispute the scope of two terms, with Samsung challenging each term as indefinite. Having considered the parties’ briefing,¹ along with arguments of counsel during the hearing conducted on December 16, 2021, the Court resolves the parties’ disputes as follows.

I. BACKGROUND

The ’767 Patent relates to gesture recognition by a two-dimensional touch sensor, which might be implemented, for example, as a touchpad of a computer or the screen of a cellular phone. See ’767 Patent (Dkt. No. 11-1) at 1:12–15, fig.12 (item 904), fig.13 (item 907). The patent

¹ Pl.’s Open’g Br., Dkt. No. 65; Defs.’ Resp. Br., Dkt. No. 66; and Pl.’s Reply Br., Dkt. No. 69.

explains that, at the time of invention, the typical methodology was to output, and then process, positional data (e.g., x- and y-coordinates) from a sensor using conditional if-then-else type statements. *See id.* at 2:47–65. That methodology, however, makes it difficult to add code for new gestures because code for recognizing one gesture often links to code for recognizing other gestures. *Id.* at 2:66–3:7.

To address this problem, the '767 Patent teaches “a state machine approach to designing and writing the gesture recognition algorithm.” *Id.* at 3:11–13. Generally, the claimed devices include a touch sensor, a position-processing unit for calculating a touch location and outputting a time series of positional data, and a gesture-processing unit that analyzes the data to distinguish gesture inputs. *Id.* at 3:12–21. The gesture processing unit includes gesture recognition code made up of linked state modules, *id.* at 3:21–25, which is central to the invention.

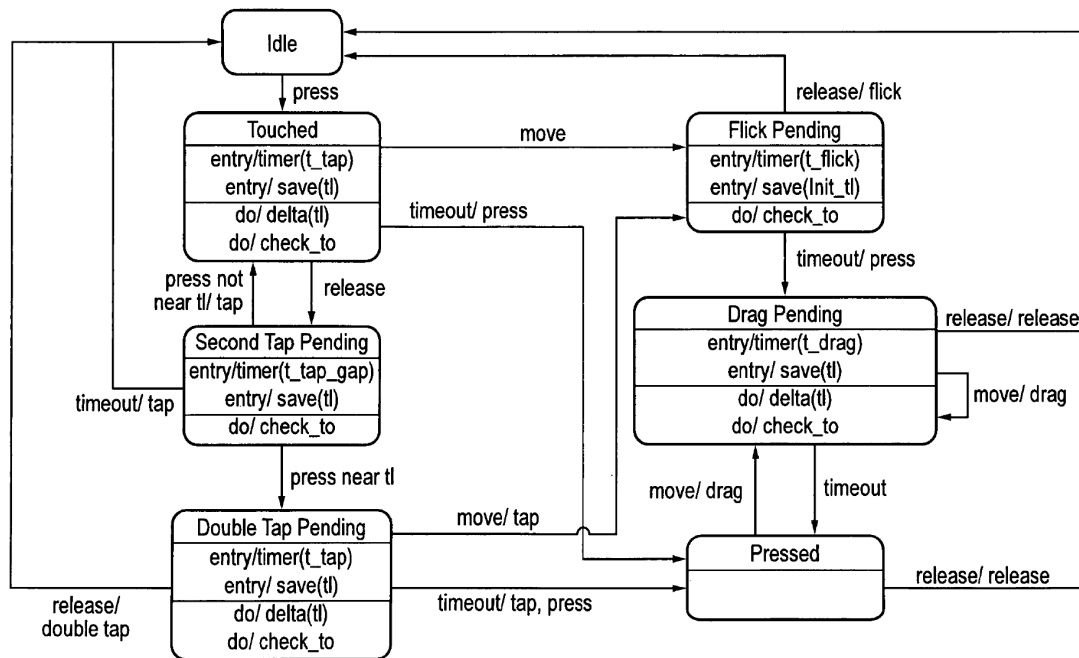


FIG. 1

Figure 1 of the '767 Patent (above) shows one embodiment of a gesture recognition state machine. The machine supports five gestures (tap, press, double tap, flick, and drag) and seven

states (Idle, Touched, Second Tap Pending, Double Tap Pending, Flick Pending, Drag Pending, and Pressed). The machine begins in the “Idle” state. When a user touches the sensor, the machine enters the “Touched” state, stores the touch location, and starts a timer. If the timer expires and the touch location remains the same, the machine generates a “press” event and transitions to the “Pressed” state. But if the touch location moves by more than a set distance from the initial touch location before the timer expires, the machine transitions to the “Flick Pending” state. If the user releases the touch, the machine enters the “Second Tap Pending” state and waits for a second touch within a certain time. In similar fashion, depending on the requirements for entering and leaving each state, the machine transitions between the states based on touch locations and timers. The machine can return to “Idle” from any of the six other states, which the patent calls “gesture-recognition states.” *See generally id.* at 8:36–10:50 (describing the 5 events, 7 states, and 17 transitions between states of Figure 1).

The disputed terms concern what the claims recite as “position-processing logic” and “gesture-processing logic.” Claim 1 concerns:

1. A touch sensor device comprising:
 - a sensor having a sensitive area extending in at least one-dimension and arranged to output sense signals responsive to proximity of an object to the sensitive area;
 - a processor operable to execute *position-processing logic stored in one or more tangible media*, the position-processing logic, when executed by the processor, configured to:
 - calculate positions of interactions with the sensitive area from an analysis of the sense signals; and
 - output a times series of data indicative of the interaction positions on the sensor, the interaction positions corresponding to touches; and

a processor operable to execute *gesture-processing logic stored in one or more tangible media*, the gesture-processing logic, when executed by the processor, configured to analyze the time series of data to distinguish one or more gesture inputs from the time series of data, the gesture-processing logic being coded with gesture-recognition code comprising a plurality of state-machine modules

Id. at 20:51–21:4 (emphasis added). Claim 11, which contains the first disputed term, then limits the relationship between the logic and hardware:

11. The device of claim 1, *the position-processing logic* being accommodated in, and running on, a first integrated circuit and *the gesture-processing logic* being accommodated in, and running on, one or more separate integrated circuits.

Id. at 22:9–12 (emphasis added). Claim 13 expressly refers only to “the gesture-processing logic”:

13. A single integrated circuit comprising:

a memory element;

a processor operable to execute logic stored in one or more tangible media, the logic, when executed by the processor, operable to:

receive a times series of data indicative of the interaction positions on a sensor, the interaction positions corresponding to touches;

analyze the time series of data to distinguish one or more gesture inputs from the time series of data, *the gesture-processing logic* being coded with gesture-recognition code comprising a plurality of state-machine modules, . . . ; and

output the recognized multi-touch gesture.

Id. at 22:44–23:12 (emphasis added).

The parties dispute the scope of two terms: (1) the entirety of Claim 11; and (2) “the

gesture-processing logic” in Claim 13.² Samsung alleges that both terms, as they appear in those claims, are indefinite.

II. LEGAL STANDARDS

A. Generally

“[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). As such, if the parties dispute the scope of the claims, the Court must determine their meaning. *See, e.g., Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007); *see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996).

Claim construction, however, “is not an obligatory exercise in redundancy.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, “[c]laim construction is a matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims” *Id.* A court need not “repeat or restate every claim term in order to comply with the ruling that claim construction is for the court.” *Id.*

When construing claims, “[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aventis Pharm. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (citing *Phillips*, 415 F.3d at 1312–13). Courts must therefore “look to the words of the claims themselves . . . to define the scope of the patented invention.” *Id.* (citations omitted). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as

² In their briefing, the parties also disputed the construction for “plurality of gesture-interpretation-state modules” in Claims 2, 3, and 6. At the claim-construction hearing, however, the parties announced their agreement that this term should be construed as “two or more state modules for interpreting the time series of data to recognize gestures.” The Court will adopt that construction.

of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313. This “person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

Intrinsic evidence is the primary resource for claim construction. *See Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips*, 415 F.3d at 1312). For certain claim terms, “the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314; *see also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) (“We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”). But for claim terms with less-apparent meanings, courts consider “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean[,] [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Phillips*, 415 F.3d at 1314.

B. Indefiniteness

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). “A patent must be precise enough to afford clear notice of what is claimed,” but that consideration must be made while accounting for the inherent limitations of language. *Id.*

at 908–09. “Indefiniteness must be proven by clear and convincing evidence.” *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

III. THE LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the art is the skill level of a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, “[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Here, only Samsung proffers an ordinary level of skill in the art. Specifically, Samsung’s expert opines that a skilled artisan at the time of invention would have been “someone with at least a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field, plus at least two years of experience in the research, design, development, and/or testing of touch and/or proximity sensors, human-machine interaction and interfaces, and related firmware and software, or the equivalent.” (Dkt. No. 66-2, Baker Decl., ¶ 32). Solas does not challenge this definition or offer a competing view. Thus, for purposes of claim construction, the Court accepts Samsung’s definition of a skilled artisan as correct.

IV. AGREED CONSTRUCTIONS

Term	Agreed Construction
“A single integrated circuit comprising:” (Claim 13)	The preamble is limiting. ³
“plurality of gesture-interpretation-state modules” (Claims 2, 3, and 6)	“two or more state modules for interpreting the time series of data to recognize gestures” ⁴

V. THE DISPUTED TERMS

- A. “the position-processing logic being accommodated in, and running on, a first integrated circuit and the gesture-processing logic being accommodated in, and running on, one or more separate integrated circuits” (Claim 11)**

Plaintiff’s Construction	Defendants’ Construction
<p>No construction necessary; plain and ordinary meaning.</p> <p>Alternatively, “logic being accommodated in . . . integrated circuit[s]” carries its plain and ordinary meaning, i.e., some or all of the claimed logic is in memory in the claimed integrated circuit(s).</p>	Indefinite.

Samsung’s indefiniteness challenge centers on the phrase “accommodated in.” Specifically, Samsung asserts there is no plain meaning for logic “accommodated in” an integrated circuit, and that neither the specification nor the file history help a skilled artisan understand the scope and meaning of the term. (Dkt. No. 66 at 9–10). According to Samsung, a skilled artisan would question whether the logic is *in* the integrated circuits, or merely *accessible by* the circuits. (*Id.* at 12). According to Solas, however, the claim clearly requires the logic to be *in* the integrated

³ Dkt. No. 65 at 6; Dkt. No. 66 at 5.

⁴ See Note 2 *supra*.

circuits. (Dkt. No. 69 at 6).

The Court finds that this term is not indefinite. While “accommodated in” might be an unusual choice to describe the relationship between logic and hardware, its meaning is clear in light of the specification: The logic is in, and not merely accessible by, the integrated circuits. In fact, Claim 1 explains that the logic is “stored in one or more tangible media,” ’767 Patent at 20:55–56, 20:64–65, and a skilled artisan would understand Claim 11 as limiting the type of “tangible media” to “integrated circuits.” The specification supports this understanding by describing the implementing code as “embedded in,” “coded with,” or “loaded into” certain types of integrated circuits. *See, e.g., id.* at [57] (explaining “[t]he gesture recognition code can be . . . compiled and embedded in a microcontroller chip, or CPU chip as desired. The gesture recognition code can be loaded into . . . a microcontroller, or other programmable logic device such as a field programmable gate array”); *id.* at 3:26–33 (same); *id.* at 3:22–23 (describing the gesture processing unit as “coded with gesture recognition code comprising a plurality of linked state modules”); *id.* at 4:35–37 (same). In contrast, nothing in the specification supports Samsung’s argument that “accommodated in” refers only to accessibility.

Admittedly, “accommodated in” is awkward for a layperson. During prosecution, the examiner equated “accommodated in” with “reside.” Office Action, Dkt. No. 65-5 at 10 (rejecting Claim 11 based on U.S. Published Appl’n 2007/0291009 (Wright) ¶ [0052]). Accordingly, for the benefit of the jury, the Court construes “accommodated in” as “residing in,” which is more commonly used in this context. *See, e.g.,* <https://www.yourdictionary.com/reside> (defining “reside” in the context of computers as “to be located or stored”) (last visited Dec. 18, 2021); U.S. Patent 6,888,536 at 14:19–20 (referring to “applications residing on [a] host computer system”); U.S. Patent 7,663,607 at 7:11–22 (“The computer code and data could also reside on a removable

storage medium and [be] loaded or installed onto the computer system when needed.”); U.S. Patent 8,049,732 at 11:60–62 (describing a look-up table that “may be implemented as one or more look-up tables residing in a memory of the [application-specific integrated circuit]”); U.S. Published Appl’n 2007/0291009 (Wright) at [0052] (“Processing device 210 may reside on a common carrier substrate such as, for example, an integrated circuit (IC) die substrate, a multi-chip module substrate, or the like.”).⁵

The Court therefore construes **“the position-processing logic being accommodated in, and running on, a first integrated circuit and the gesture-processing logic being accommodated in, and running on, one or more separate integrated circuits”** to mean **“the position-processing logic residing in, and running on, a first integrated circuit and the gesture-processing logic residing in, and running on, one or more separate integrated circuits.”**

B. “the gesture-processing logic” (Claim 13)

Plaintiff’s Construction	Defendants’ Construction
“the logic”	Indefinite.

Samsung contends that this term from Claim 13 lacks antecedent basis. (Dkt. No. 66 at 13–15). Given that lack of antecedent basis, Samsung alleges the intrinsic record provides no guidance as to what the phrase refers. (*Id.* at 15). For example, Samsung argues that a skilled artisan would not understand whether the term refers to “receiv[ing] a time series of data” or “analyz[ing] the time series of data” recited earlier in the claim. (*Id.* at 15–16).

Solas, however, asserts a skilled artisan would recognize that the term refers to the “logic”

⁵ In addition to Wright, U.S. Patents 6,888,536, 7,663,607, and 8,049,732 were cited during prosecution of the underlying application. ’767 Patent at [56].

recited earlier in the claim. (Dkt. No. 65 at 16). Comparing Claim 1 to Claim 13, Solas notes that Claim 1 recites both “position-processing logic” and “gesture-processing logic” while Claim 13 only recites the latter. (*Id.* at 17–18). Solas reasons that because Claim 13 does not include the position-processing functions of Claim 1, “the logic” of column 22, lines 46–47 must be the “gesture processing logic” recited later in the claim. (*Id.* at 18–19).

As an initial matter, “claims are not necessarily invalid for a lack of antecedent basis.” *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1376 (Fed. Cir. 2008). Rather, “a claim could be indefinite if a term does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable.” *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008). However, when a claim’s meaning would reasonably be understood by skilled artisans when read in light of the specification, it is not invalid. *See Energizer Holdings, Inc. v. I.T.C.*, 435 F.3d 1366, 1370 (Fed. Cir. 2006). Here, then, the Court must decide whether Claim 13, considered in the context of the specification and despite the alleged lack of explicit antecedent basis for the term, has a reasonably ascertainable meaning to a skilled artisan. (*See id.*).

The Court finds that the lack of antecedent basis for “the logic” does not render Claim 13 indefinite. A skilled artisan would understand from a common-sense reading of the claim language that “the gesture-processing logic” is the logic that “analyze[s] the time series of data.” The disputed term is part of the “analyze” limitation, which clearly links “the gesture-processing logic” to the data analysis. In contrast, a skilled artisan would *not* associate “gesture processing” with simply receiving data because the term is not part of the “receive” limitation and receiving data is unrelated to the gesture recognition function as taught by the ’767 Patent.

Other excerpts from the ’767 Patent support this conclusion. Claim 1, for example, recites

almost identical “analyze” language clearly tied to the gesture-processing logic. *See* ’767 Patent at 20:64–21:4; *see also id.* at 22:17–20 (reciting, in Claim 12, “analyzing the time series of data to distinguish one or more gesture inputs . . . using gesture-recognition code”); *id.* at 23:15–24 (reciting, in Claim 14, a processor operable to “analyze the time series of data to distinguish one or more gesture inputs from the time series of data using gesture-recognition code comprising a plurality of state-machine modules”). Similarly, the specification ties almost identical language to a gesture processing unit. *See id.* at 3:19–23 (describing “a gesture processing unit operable to analyze the time series data to distinguish one or more gesture inputs therefrom, wherein the gesture processing unit is coded with gesture recognition code comprising a plurality of linked state modules”); *see also id.* at 4:32–37 (same). Importantly, the patent does *not* describe the gesture-recognition code or logic as being responsible for receiving the time series of data. Thus, when considered in the proper context, a skilled artisan would understand that “the gesture processing logic” in Claim 13 refers only to analyzing the time series of data. The Court therefore rejects Samsung’s indefiniteness challenge.


The Court also rejects Solas’s position that “the gesture-processing logic” is the same “logic” recited earlier in the claim. Although Solas correctly concludes that Claim 13 excludes “the position-processing logic” recited in Claim 1, as noted *supra*, the specification does *not* describe the gesture-processing logic as being responsible for receiving data. Moreover, the applicant chose to add the “gesture-processing” modifier after introducing the more general “logic” earlier in the claim, which suggests the earlier-recited “logic” is different. Based on the claim language and specification, a skilled artisan would understand that “the logic” of column 22, lines 46–47 includes, but is not limited to, “the gesture-processing logic.”

VI. CONCLUSION

Term or Phrase	The Court's Construction
"A single integrated circuit comprising:" (Claim 13)	The preamble is limiting.
"plurality of gesture-interpretation-state modules" (Claims 2, 3, and 6)	"two or more state modules for interpreting the time series of data to recognize gestures"
"the position-processing logic being accommodated in, and running on, a first integrated circuit and the gesture-processing logic being accommodated in, and running on, one or more separate integrated circuits" (Claim 11)	"the position-processing logic residing in, and running on, a first integrated circuit and the gesture-processing logic residing in, and running on, one or more separate integrated circuits"
"the gesture-processing logic" (Claim 13)	Not indefinite.

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party's claim construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this Order, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

So ORDERED and SIGNED this 4th day of January, 2022.


 RODNEY GILSTRAP
 UNITED STATES DISTRICT JUDGE